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RUFUS PORTER, EDITOR.

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☞ *See Advertisement on last page.*

THE LAY OF THE LABORER.

A spade! a rake! a hoe!
A pickaxe, or a bill!
A hook to reap, or a scythe to mow,
A flail, or what ye will—
And here's a ready hand
To ply the needful tool,
And skill'd enough by lessons rough
In labor's rugged school.

To hedge, or dig the ditch,
To lop or fell the tree,
To lay the swarth on the sultry field,
Or plough the stubborn lea,
The harvest stack to bind,
The wheaten rick to thatch;
And never fear in my pouch to find
The tinder and the match.

Where ever nature needs,
Where ever nature calls,
No job I'll shirk of the hardest work,
To shun the work house walls
Where savage laws begrudge
The pauper babe its breath,
And doom a wife to a widow's life
Before her partner's death.

No parish money or loaf,
No pauper badges for me,
A son of the soil, by right of toil,
Entitled to my fee.
Whatever the tool to ply,
Here is a willing drudge,
With muscles and limb—and woe to him
Who does their pay begrudge.

SONS OF LABOR.

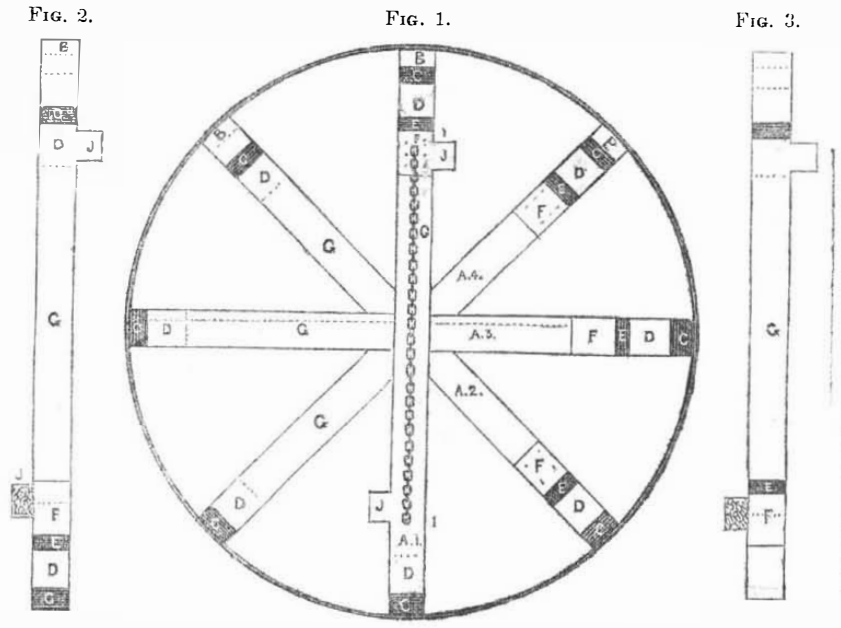
Sons of labor! ever strongest,
Of the soldiers freedom owns;
First to meet, and last and longest
In the conflict with the drones.
Sturdy sons of labor! ranging
Side by side, to battle wrong,
With the weak, who still, unchanging,
Struggle on against the strong.

Lynx-eyed sons of labor! seeing
Danger earliest from afar,
And then rallying, battling, being
All that glory's children are.
Sons of labor! ever foremost,
When the trumpet calls the brave—
Ever readiest, ever warmest,
For the victory, or the grave.

Who shall marvel that *he* led them.
Led a people stern and proud—
Stern in truth, and proud of freedom—
He, of labor's sinewy crowd.
Who shall marvel, what the wonder—
That a heart and mind of those
Free, electric as the thunder,
Should arise where Freedom rose?

Sons of labor! whose opinions
Rule, have chosen labor's son:
Effeminacy's tawdry minions
Dare not murmur—it is done.
Sturdy sons of labor! strongest
Where the flood of battle moans;
And the earliest, and the longest,
In the conflict of the drones.

AUSTIN'S PERPETUAL MOTION.



Introduction.—This subject has been for a long time a favorite study of the inventor, as may be supposed by the very elaborate description and illustration which he has given thereof, and which we shall give in his own words (including the preface,) but without intimating thereby, any confidence on our part, in the correctness of his conclusions. The insertion thereof will at least have the effect to illustrate the labarynthial depths into which an inventive mind is liable to be led, by intense pursuit of an unreachable object. We shall continue the explanations through several numbers, and at the completion hold ourselves ready to either refute, or admit the correctness of the inventor's theory.

"The following is a plan of a wheel invented by Cornelius Austin, which he thinks will move on the principle of perpetual motion, illustrated by drawings, explanation and remarks, which he submits to the examination of the Editor of the "Scientific American," "New York," in order to obtain his opinion respecting it, and also to get it published in said paper, to prove priority of discovery.

Fig. 1. This represents a wheel 48 feet in diameter, A 1, A 2, A 3, A 4, are large tubes passing through the centre of the wheel, the length of each being equal to the diameter of the wheel. For the purpose of making the computation more easy, and more easily understood, let us suppose the hollow of the tubes to be 1 foot square.

Tube 1. B is three fourths of a cubic foot of vacuum to make room for the expansion of the air in F, which may be occasioned by very warm weather. Each C is 2016 lbs., of lead whose bulk shall occupy the space of 2 1-2 cubic feet to press, instead of the atmosphere, upon the column of water in the tube. Each D is 4 cubic feet of water, E is one fourth cubic foot of lead. It is 12 inches long, 12 wide, and 3 thick. One of its largest sides is fastened to the outside of the upper end of F. I weighs in the water a little more than 120 lbs F is a bag made of India rubber cloth, filled with common atmospheric air. It is 4 cubic feet when under the pressure of D and E. It is 1 foot square, and 4 feet long, G is the water in the space between F and the lower D. This space is 30 feet in length. The representation in this tube, extending from I to I, is a chain 32 feet long. Every inch of it is of equal weight. The whole of it weighs, in the water, a little less than 120 lbs. The chain bears equally on each side of the wheel, until, by the turning of the wheel, the chain becomes in a horizontal position. Soon after, the chain, by its weight, descends into the J which is descending by the motion of the wheel. One end of the chain is fastened to F at a point half a foot below the upper end of F, when F is in the position as represented in this tube. Each J is a space jutting from the tube to contain the chain when coiled.

Fig. 2. This figure shows the situation of a tube when the weights carried up by F, arrive at a point directly under the centre of the wheel, before we suppose E to be carried above F. C, D, E, J and G, are the same as in fig. 1. F is F in fig. 1, being here compressed within the compass of nearly 2 cubic feet. The chain lies coiled in the lower J. B is B in fig. 1, being removed from the other end of the tube to this end. The dots above C are used to divide the space above it into 3 parts. The upper part is three fourths of a cubic foot, each of the other parts is nearly 1 cubic foot. The space betwen C and B is a vacuum occasioned by the compression of F. Just before E gets to a point directly under the centre of the wheel, we will suppose it to be carried above F so as to be ready to begin to ascend, as soon as it gets to this point.

Fig. 3. This is the same as figure 2, after E is carried, by supposition, above F.

The chain is represented in figure 1, because it shows very plainly how a weight, which is drawn up by F should gradually bear harder and harder on F as the air in F gradually expands while ascending. The chain may be used, but a weight, drawn up by means of a helical spring, would be more convenient, and answer a better purpose. Let us, therefore, suppose it to be used in this wheel.

Fig. 4*. This shows the manner of using a weight and a helical spring instead of a chain. H is a weight to be used instead of the chain, and must be the same number of lbs. F is F in fig 1. The representation attached to K and the upper part of F is a helical spring. This spring must be so made as to draw, like the chain, gradually harder and harder as it is extended by the ascension of F. When F has ascended as high as it is calculated to go, the spring then should draw as hard upon the weight as it is possible for it to do, without raising it from its bearing. It should be just upon the point of being raised, but *not* be raised. As F descends by the motion of the wheel K is gradually drawn, by the helical spring, nearer and nearer to F and consequently its opposing power is gradually diminished, until it arrives at the centre of the wheel. After it passes the centre, its impulsive power is gradually increased, until it arrives at F.

(*To be continued.*)

This Figure will appear in next number.

There are now 500 souls in Oregon City, and about 80 houses. It was a forest 3 years ago.

LIST OF PATENTS

Issued from the United States Patent Office, for the week ending 20th of March, 1847,

To Erastus B. Bigelow of Boston, Massachusetts, for improvement in Brussels Looms. Patented March 20th, 1847.

To James Hayworth, of Frankford, Pennsylvania, for improvement in Looms. Patented March 20th, 1847.

To Alfred Stillman, of New York, for improvement in apparatus for indicating the height of water in boilers by the use of fusible alloy. Patented March 20th, 1847.

To Joseph Vickerstaff, of Philadelphia, Pennsylvania, for improvement in Stocking Looms Patented March 20th, 1847.

To Wilson Eddy, of Springfield, Massachusetts, for improvement in Steam Cylinders, (having assigned his right, title and interest to Septimus Norris of Philadelphia, Pennsylvania.) Patented March 20th, 1847.

To Horace Allen, of N. York, for improvement in Cut-off Valves. Patented March 20th, 1847.

To Henry K. Grame, of New York, for improvement in Cut-off Valves. Patented March 20th, 1847.

To James Old, of Pittsburg, Penn., for improvement in Boxes for Journals. Patented March 20th, 1847.

To P. Grouvelle, L. N. Mouchot & E. Mouchot, of Paris, France, for improvement in Bake Ovens, (having assigned their right to B. Rodreguez of New Orleans, La.) Patented March 20th, 1847. Ante dated April 27, 1844.

To George H. Thatchei, of Ballston, New York, for improvement in Foot Stoves. Patented March 20th, 1847.

To Ralph Bulkley, of New York, for improvement in Pumps of Ships. Patented March 20th, 1847.

To John Bamboraugh, of Lancaster, Penn., for improvement in Wheat Fans. Patented March 20th, 1847.

To Henry R. Dunham, of New York, for improvement in connecting side pipes with the steam chests. Patented March 20th, 1847.

DESIGNS.

To Peter J. Simmons, of Troy, New York, for Design for Stove, having assigned his right to S. F. Rathbone, of Albany, New York.—Patented March 20th, 1847.

To John F. Rathbone, of Albany, New York, for Design for Stoves. Patented March 20th, 1847.

Dark Grief.

At a recent Recorder's Court in St. Louis a dark lady was brought up on a charge of being out in the evening without a pass, who being asked what she had to say to the charge, answered in the following eloquent strain:

"Dat dar Bill what's been coutin' dis gal for de las tree monts went off to a colored party wid anuder gal, and dis child only went to see what de niggers wur doin' dar. I isn't gwine to hab nuffin' more to do wid de nigger now, and don't care what you do wid me." They only fined the jealous colored lady $3.

Theory and Practice.

While talking to Reidel the other day, on his approaching death by sentence of the law, a Clergyman whose devotion to his master's will had led him to visit the unfortunate prisoner, was descanting on the duties of charity. Reidel heard him patiently for some time, but at length observed—"You say if you haf two coat, gif one away to de neighbor. Now you haf a coat and a cloak—I haf only 'tis tam olejacket; gif me te cloak." We did not hear how the worthy clergyman relished this practical application of his preaching.—*Pittsburg Journal.*

One thousand Circassian females were imported into Turkey as slaves during the past year.

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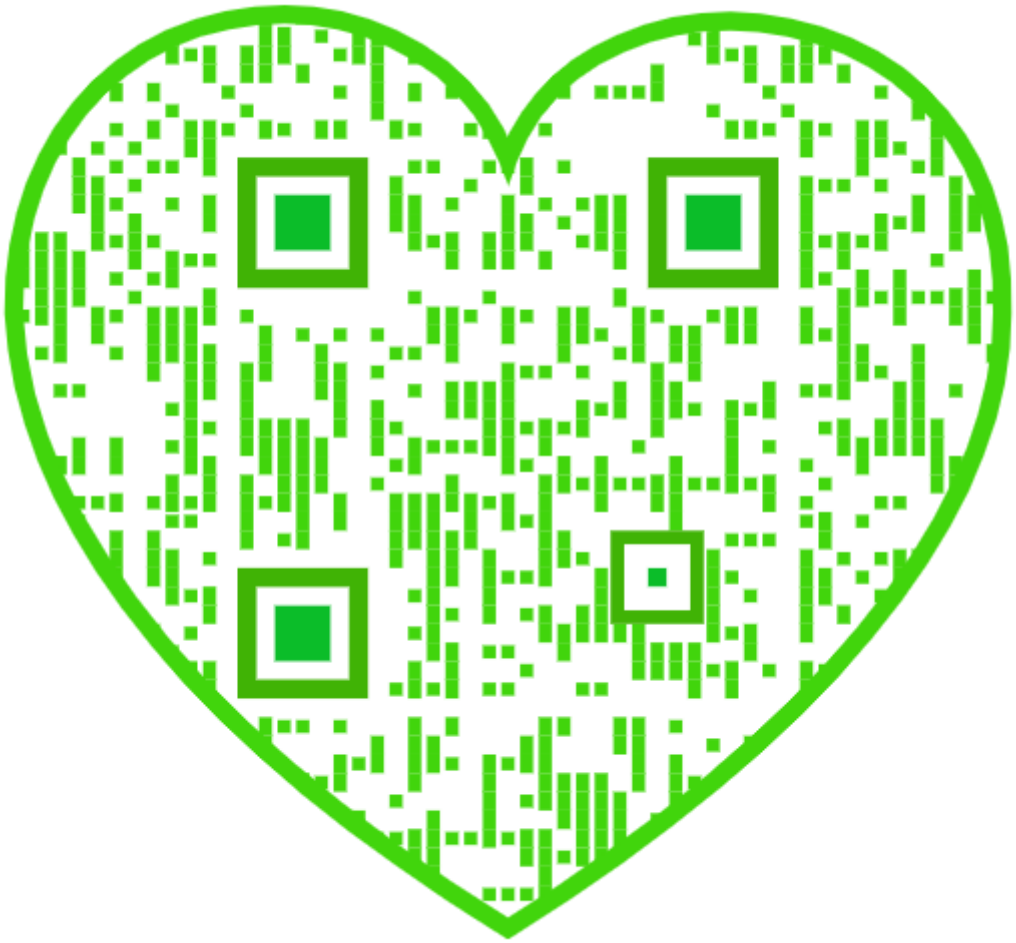

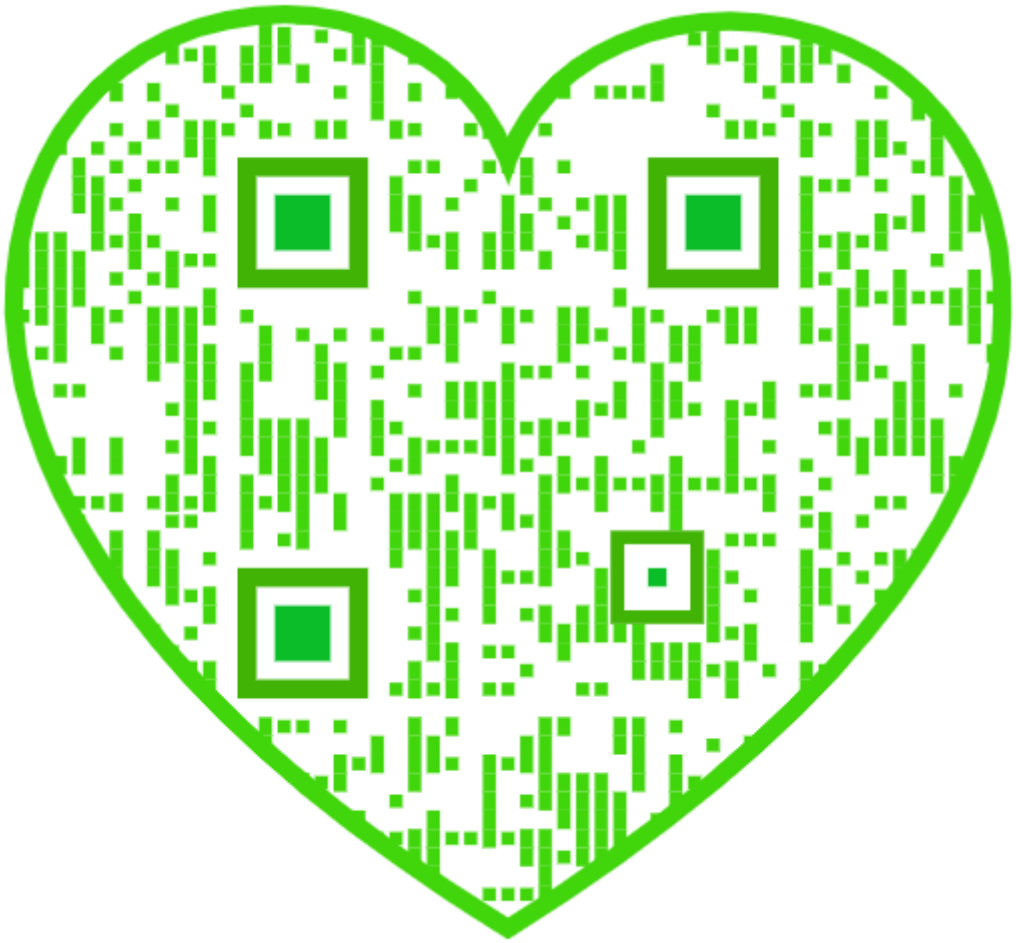

Celestial Phenomenon.

Rev. James M'Kay has furnished the New Haven Palladium with the description of a singular appearance, as follows: "On the night of Saturday, the 6th inst., between the hours of 11 and 12 o'clock, a very extraordinary phenomenon appeared in the heavens when the moon was about eight or ten degrees above the horizon. There was a very thin veil of mist in the East. At precisely the same elevation as that of the moon, and about 20 degrees to the south of it, we saw a luminous appearance, which strikingly resembled a cross, the horizontal beam extending beyond the vertical one, three times further on the south side than it did on the north. Both beams appeared to be almost perfectly straight; the breadth of each being about a quarter of a degree. At their intersection we observed an ill-defined spot, twice or three times as bright as any other part. The upper end of the vertical beam showed faint prismatic colors. The northern part of the horizontal beam disappeared when the remaining parts of the figure became most brilliant.

Black Walnut.

Nearly all the steamboats going down the Mississippi carry large quantities of that valuable wood for making furniture. A few years ago thousands of trees of that valuable stock in Ohio, were girdled, fell, and recklessly burnt. Black walnut, or even our good old fashioned solid *Oak*, which lasts for generations, is much better, if not more beautiful for furniture, than the veneered mahogany.

In the wrong Box.

An amusing incident occurred at Portland last Sabbath. An orthodox clergyman in exchanging pulpits with a brother of the same faith, went into the Universalist church by mistake. He discovered his error just as he began to ascend to the pulpit, and turned and left us quickly as though he had come in contact with the evil one. Nobody was hurt, but some of the congregation regret that he did not stop and preach them a sermon!

A Singular Case.

A man in Pittsburg, the other day, complained at the police office, that his wife had stolen forty dollars from his trunk. The fair delinquent acknowledged the taking, but argued that she was entitled to half her husband's money—there was $80 in the trunk and she took $40. The affair was settled by the return of $30, the wife keeping $10 for pin money. Of course hubby had to pay the costs.

A Cotton Gin for Russia.

The Madison (Ga.) Miscellany says:—We understand that Messrs Windship and King, of this county, have received an order from the Russian Consul, at Savannah, for one of their superior cotton gins, which is to be sent direct to the Emperor of Russia.

Progress of Romanism.

It is stated in an English paper that the Eucharist was carried through the streets of London by the Catholics, with lights blazing in procession, to visit the death bed of one of the faithful. The people stood uncovered as it passed. Such an event has not occurred before in England since the reformation.

Enterprise of Troy.

A large Bleach field will soon be in operation at Ida Mills Troy. Its machinery is to be on the most improved principles and its capacities for the quality and quantity of finishing cotton cloths, is said will be superior to any in the United States.

Concert.

In consequence of the severe storm last Tuesday Evening the Alleganians will give another Concert at the Tabernacle on Monday Evening next. The house was very well filled at their Concert Tuesday Evening, but as many were disappointed in not being at their last Concert (before they left on their southern) tower) they have been prevailed upon by their numerous friends to repeat their concert as above.

Education in America.

A visitor in Lowell writes:—"In looking over the pay rolls or book, which I accidentally picked up from the table, I found on twenty seven consecutive pages containing eight hundred signatures, nearly all girls, but a single one that had a mark of X, all written in a good, and many of them in a most elegant hand. The clerk observed to me that Lord Morpeth, when on a visit to this country some years ago, happened to be present on pay day: "What, do your operatives write?" "Certainly, sir," said the clerk, "the Americans all write" Directly there came a man who made his mark. "Ah!" said his lordship, with a smile, "I thought you said all wrote." "All Americans, your lordship," "this was an Englishman."

To Wine Bibbers.

Mr. George Savage offers to pay $10 per gallon for any quantity of wine that can be proved by proper tests to be free from sugar of lead, green vitriol, alum, gum benzoin, red sanders, salt of tartar, nux vomica, oil of vitriol, prussic acid, capsicum, aloes, logwood, opium, tobacco, essential oils, oil of bitter almonds, bitter oranges, India berry, elder berries, poke berries, Brazil wood, dragon's blood, burnt sugar, brandy, lamb's blood, coculus indicus, and divers other delightful ingredients, too numerous to mention.

New Use for the Telegraph.

A novel project is on foot in the Common Council of New York to run a Telegraph line from the Fire-lookout on the City Hall, to each of the 18 police stations, to give intelligence of the whereabouts of every fire, so that on hearing the great bell, a person in any part of the city can ascertain at the station house where it is.

Improved Newspaper.

A pastry cook at Bologna has produced a very novel substitute for a newspaper. It is composed of delicate paste leaves on which witty articles are printed; not with ink, but with chocolate juice. Thus after its literary contents are devoured, the reader may devour the production itself.

Hot House Vegetables in England.

In January the vegetable market in London exhibited new potatoes, asparagus, and cucumbers. Potatoes 20 cents per pound, asparagus $2 per bundle, and cucumbers from $1,50 to $2 each.

Mammoth Ox.

The Cleveland Herald says there is an ox in that city, six years old, now measuring 10 1-2 feet from head to tail, 9 1-2 feet high, and weighing in the neighborhood of 4000 lbs.

The "Gem of the Prairie,"

An excellent paper, by the way,—having credited one of our articles to the "N. Y. American—honestly of course—we would respectfully inform its conductors that *that* is the title of *another* paper."

Still Burning.

Twenty months have elapsed since the great fire of July, 1845, yet on Tuesday, in removing some rubbish in Broadway, opposite Morris-street, the workmen discovered a mass of live coals!

Conveyance for the Wounded.

"Within a few days, the government has purchased up a large number of the furniture cars in Cincinnati, for the use of the army.—They are intended for hospital wagons, to carry the wounded and diseased soldiers; they are admirably adapted to that purpose.

Travelling Facilities.

We are informed that the abuses of privilege so long complained of by travellers between this city and Philadelphia are about to be removed; that a cheap freight and passenger train is to be started from Trenton to N. York, and that the accommodations on the Amboy line are to be improved.

Enterprise in Buffalo.

There are said to be a large number of buildings in progress of erection in Buffalo, and among them a new Exchange, 229 feet by 111—containing 140 rooms. This building will be connected with Spaulding's Exchange, and the whole pile will contain 413 rooms

John Stewart, a pensioner, some years since was married in Scotland, to Jane Douglass—The lady's age was 60—the bridegroom's 108.

Going to Retire.

Gen. Tom Thumb has purchased a beautiful country seat in Connecticut, to which he will positively retire after making a brief visit to the principal cities of the union.

He is expected to build a new and fashionable cottage or villa, six feet high for his special residence, and will give particular attention to the culture of humming birds. Seriously, if he should have constructed buildings, millwork and fences in minature with fields in proportion, and establish a fee of $1, admission, he might go on increasing his fortune rapidly, while he was enjoying life in the country to the best advantage.

New Boat for the Sound.

The Norwich Railroad Company have chartered the new, strong and elegant steamer "Cornelius Vanderbilt," for the coming season. This boat is said to be the first rate in every respect.

Mr. Goodyear of this city, is said to have contracts with the Government for supplying India rubber military equipments for the army to the amount of $200,000.

A Mr. Lubberly of Trenton, having had a bull butted off the track by a locomotive, retaliated by placing obstructions on the track, for which he has been sentenced to pay a fine of $100.

The new comet, recently discovered by the astronomers of Cambridge, is said to be now visible to the naked eye. We have not taken a peep at it yet.

One Albert J. Smith having petitioned the New York Legislature for a change of name, his petition was referred to the five Smiths in the Assembly.

It is said that Lord Palmerston is about to demand the liberation of 5,000 negroes, whom he affirms are English subjects, detained in slavery in the Island of Cuba.

We have observed in several papers, a notice of a *self-acting* drill, but which we find is operated by steam or other power, instead of being a "perpetual motion," as its title would indicate.

A letter from Florence says that the present liberal Pope was once a missionary to the U. States. This may be a key to his liberal opinions.

On a memorable occasion, Henry V. wore a mantle of rich blue satin, full of small eyelet holes, as thickly as they could be made, and a needle hanging by a silk thread from every hole.

It is said of Uriah Burkit who died in Hartford in 1801, that he had been sexton upwards of fifty years, and buried two thousand, two hundred and forty five persons.

A ship-owner of Boston recently contributed $300 to the Irish relief fund, as a "part of the pecuniary debt due to *starvation* for the rise of freights."

An exchange remarks to a correspondent that his communication will be inserted as soon as *its length* will permit. Whether the article is required to grow shorter or longer, is not specified.

There are 72 kinds of vegetables on which swine will feed; 171 kinds they will not touch. A horse will feed on 262 kinds of grass and reject 212.

The White Mountains derive their name from the snow which rests upon them. Their appearance is not white, except when viewed from a distance

Dr Green, an eminent physician, recently made the remark, that "much of the art of physic consists in knowing when *not* to prescribe medicines.

In Boston there is a church to every 2000 inhabitants. In New Orleans there are about 20,000 inhabitants to one church.

The Lutheran Church has 1000 congregations in the United States. 30,000,000 people belong to this denomination.

San Juan de Ulloa, is said by an exchange, to be the *prize* of the southern campaign.—Of course, when our soldiers take possession, it will constitute a great *enter-prize*.

LATE FROM EUROPE.

The Steamer Hibernia arrived at Boston on Saturday evening, too late for the evening train for this city, but the leading items of news were transmitted by telegraph, and published in this and other cities, south and north, on the same evening. We find but little news by this arrival, particularly interesting, except to merchants and speculators. The prices of bread stuffs had materially declined, (through their abundance and the inability of people to buy) though the suffering of starvation has by no means abated. It appears that at least seven thousand have died in consequence of the famine in Ireland, but the people have become more reconciled to their fate, and the excitement has subsided.

LATE FROM THE ARMY.

Various exciting but contradictory rumors of battles &c., have rapidly succeeded each other for two weeks past, but which, on account of their doubtful characters, we neglected to notice in our last paper, and even now we have but little certain intelligence further than that Santa Anna left San Louis Potosi early in February with an army of 22000 men, marching in the direction of Saltillo:—that Gen. Taylor has been attacked at or near Saltillo by the Mexican forces;—that a large body of Mexican cavalry have taken ground between Monterey and Camargo, thus cutting off all communication with Gen. Taylors army, and that many American wagons have been captured by the Mexicans. The latest intelligence up to March 3d, has come by way of the Mexicans, who represent that a tremendous battle has been fought, between 15,000 Mexicans and 5000 Americans, in which the Mexicans were repulsed with the loss of 4000, the American loss being 2000 men. We would give the various rumors and reports more in detail, but the state of our columns will not admit.

The True Sun says that within the last twelve months the citizens of New York have taken stock in various new railroads to the amount of near $7,000,000.

The Wisconsin Convention have passed a law against the collection of debts by legal process, where the sum is less than one hundred dollars.

"There is one kind of tea," said a sergeant to his captain after calling the roll, "that ought to be heavily taxed, and that is *absentee*."

Among the bills passed during the late session is one admitting Wisconsin into the Union as a *state*. There is, therefore, now an additional star on the flag of our Union.

During the year 1846 there were taken to the various watchhouses in Boston, 6563 persons, male and female. The arrests for drunkenness were 3511

7000 bushels of corn have been purchased by the Albany Committee for the relief of the starving Irish. It was purchased at 82 a 82½ cents per bushel.

The number of passengers carried over the Lowell railroad within the year past, is stated at 326,657,—about 1043 per day, on an average.

There are now two hundred & fifty churches in New York, valued at $40,000,000. The Trinity Church property is worth about $30,000,000.

Sweden has 160,000 distilleries and furnishes yearly 40,000,000 of gallons of spirits. The population of Sweden is less than 3,000,000

Michael Rocket, a rumselling gentleman, of Taunton, Mass., has been put in jail for four months, in default of the payment of a $100 fine.

The amount of wheat on hand at Milwaukie, on the 22d ult., was estimated at 160,000 bushels and every day added 1500 to 2000 bushels to the aggregate.

The ladies of Brooklyn recently gave a festival, from which they raised $449 86 cents, for the relief of Ireland. Surely the ladies *can* work wonders.

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TURN THE CARPET.

As at their work two weavers sat,
Beguiling time with friendly chat,
They touched upon the price of meat—
So high a weaver, scarce could eat.

'What with my babes and sickly wife,'
Quoth Dick, 'I'm almost tired of life;
So hard my work, so poor my fare,
'Tis more than mortal man can bear.

'How glorious is the rich man's state!
His house so fine! his wealth so great!
Heav'n is unjust you must agree:
Why all to him? Why none to me?

'In spite of what the Scripture teaches,
In spite of all the parson preaches,
This world (indeed I've thought so long)
Is ruled, methinks, extremely wrong.

'Where'er I look, howe'er I range,
'Tis all confused, and hard and strange;
The good are troubled and oppressed,
And all the wicked are the bless'd.'

Quoth John, 'Our ignorance is the cause,
Why thus we blame our Maker's laws,
Parts of His ways alone we know—
'Tis all that men can see below.

'Seest thou that carpet, not half done,
Which thou, Dear Dick, has well begun!
Behold the wild confusion there,
So rude the mass, it makes one stare.

'A stranger, ignorant of trade,
Would say, no meaning's there convey'd;
For where's the middle, where's the border?
Thy carpet now is all disorder.

Quoth Dick, 'My work is yet in bits,
But still in every part it fits:
Beside, you reason like a lout—
Why, man, that carpet's *inside out!*

Says John: 'Thou say'st the thing I mean,
And now I hope to cure thy spleen;
This world which clouds thy soul with doubt
Is but a carpet inside out.

'As when we view those shreds and ends,
We know not what the whole intends;
So when on earth things look but odd,
They're working out some scheme of God.

No plan, no pattern can we trace,
All wants proportion, truth and grace;
The motley mixture we deride,
Nor see the beauteous upper side.

'But when we reach that world of light,
And view those works of God aright,
Then shall we see the whole design,
And own the workman is divine.

'What now seem random strokes, will there
All order and design appear;
Then shall we praise what here we spurn'd,
For then *the carpet shall be turned.*'

'Thou'rt right,' quoth Dick, 'no more I'll grumble
That this sad world's so strange a jumble;
My impious doubts are put to flight,
For my own carpet sets me right.'

Popular Misery.

The following description of the inmates of a house called "the Old Brewery," in this city, is given by one of the editors of the Express, who recently visited the premises.

"The number of families which are supposed to call that their home is *sixty*, and a more miserable set of beings we have never seen.—Our visit was in the night time, and most of the residents were at home. In one room we saw a husband and his wife, with three children, sound asleep on a bed of shavings, and the furniture of the room consisted only of a pine box, a wooden bowl, which was full of meal, and and a tin cup, while on the hearth of the empty fire place were scattered a few meatless bones. In another we saw a woman in a beastly state of intoxication, whose child wrapped in some filthy rags, was lying upon a bed of *warm ashes* in one corner of the fire place.—In one a lot of half clothed negroes were fighting like hyenas; and in another a forlorn old man was suffering with delirium tremens.

The Queen of Portugal has the most valuable Diamond in the world; supposed to be worth $215,000,000.

THE WEATHER, &c.

WEDNESDAY, MARCH 17th.

	Hours, A. M.									Hours, P. M.									
	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10
Equilibrium continued.																			
Therm.	—	—	21	22	25½	30	33	35½	38	39	41	42	40½	39½	36	35	33½	33	—
Wires,	—	—	45	45	48	50	51½	52	53	54	54	54½	53	53	51	49½	48½	48	—
																		[*Equilibrium repeated.*	
THURSDAY, 18th.																			
Therm.	—	—	33	35	37½	42	47½	46½	50	46	42	39	39	39	36	32½	34	33	32½
Wires,	—	—	48	49½	50½	53	55	55½	56	54	51½	50	49	50	49½	49	48	48	47
[*Equilibrium continued.*																			
FRIDAY 19th.																			
Therm.	—	—	32	33	36	40	41½	42	43½	45½	48	50	47	45	41½	39	37½	35	—
Wires,	—	—	48	48	51	53	53	53	53½	54½	56	57	55	54	52	50½	49½	48½	—
SATURDAY, 20th.																			
Therm.	—	—	27½	32½	37	43	46	48	42	43	44	43	41½	40	39	39	39	41	—
Wires,	—	—	46	49	51	54	56	56	52½	51½	52	51½	51	50½	50	50	50	52½	—
																		[*Rise in the night.*	
SUNDAY 21st.																			
Therm.	—	—	45	47	48	—	47	47	49½	50	48	51	51	46	44	44	45	44	—
Wires,	—	—	52	54	54	—	54	53½	54½	54½	54	54½	53½	53	51	50	51	50	—
MONDAY 22d.																			
Therm.	—	—	—	37	37	37	38	38½	40	39½	38	38	37½	37½	37	36½	36	36	35
Wires,	—	—	—	49½	49½	49½	51	51½	52½	51½	50	50	50	50	49	49	49½	49½	49
																		[*Equilibriums.*	
TUESDAY, 23d.																			
Therm.	—	—	34	33	34½	37	39	46	48	46	48½	43	42	39	38	37½	39	37	36
Wires,	—	—	49	48	49	50	51	53	55	54	54	52½	52	50	50	49½	49½	49½	49½
																		[*Equilibration commenced.*	

REMARKS.

Wednesday, 17th, the wind blew hard during the entire day. Thursday, 18th, rain commenced at 12h. 45m. P. M., and continued 5 hours. Saturday, 20th, a sprinkle of rain at 1 P. M. Sunday, 21st, the sparrows commenced their Spring songs early in the morning—at 10 A. M. a cloud came hurriedly over from the Southwest which was the commencement of the Equinoctial storm, and shortly after this, viz. at 3 P. M., the Wires and Thermometer were but 3 1-2 degrees apart, a state of the wires which has not occurred before.

Letters from a correspondent dated on the Southwestern mountains of Virginia, March 7, says: "The weather is warm, 56 to 60° to 16 o'clock this morning." Another from the same correspondent, of the 10th, at 10 A. M., says: "The rain has fallen to the depth of 2 inches in the last 26 hours. The temperature of the air has been 56 to 60, and from 6 o'clock last evening to 9 o'clock this morning, and from 58 1-2 to 59, and at 4 1-2 o'clock the black southwest clouds were covered with bright flashes of lightning and much distant thunder was heard; now, 10 o'clock, the wind is from the northwest and west, without change of temperature." In a postscript of the 11th, he says: "The wind has veered round to the north, the thermometer at 55, and every appearance of an extensive flood." Another postscript of the 12th, says: "The wind came from the East all last night, the temperature about 40; it is now, (12 o'clock,) from the north, but the higher clouds are from the west with great agitation among them. The river is very high—the distant mountains have frosted snow on the trees from last night's storm. In the last 100 hours four inches of rain have fallen.',

On the 12th, snow fell 4 inches deep at Richmond, Va., and on the morning of the 10th, a lightning storm passed over Reading, Pa.

E. MERIAM.

Brooklyn Heights, March 23, 1847.

Lightning.

COMMUNICATED BY E. MERIAM, ESQ.

I have collected together records of lightning storms for a number of years and have arranged these in chronological order. These present facts that are highly instructive. The record left by the lightning in its visitations cannot be mistaken—they are expressed in language that is intelligible to every close observer of nature.

I have recorded upwards of 700 cases of destruction and damage by lightning in which is the record of death by lightning of more than 500 persons.

I have never yet heard of or known of death by lightning in a building or vessel protected by any kind of a lightning rod (no matter what its construction) reared for the purpose of protection.

The British Parliament in 1839 appointed a Commission to investigate the cases of damage by lightning on board of the vessels in the British navy—that committee was composed of distinguished naval officers and scientific men, and they were a long time engaged in their labors and made an elaborate report, in the conclusion of which they say: "and in no instance, so far as we are aware of, has ever occurred of a ship sustaining injury, when struck by lightning if the conductor was up to the mast head, and the continuity uninterrupted to the water."

The Secretary of the Navy, the Hon. D. Henshaw, in a letter addressed to me from the Navy Department, dated August 2d, 1843, says: "none of our ships have ever been injured if the conductors were up."

Commodore Stringham in a letter to me, dated Navy Yard, Brooklyn, August 10, 1843, says: "I have to state that the iron used for conductors of vessels of war in the Navy is as follows: For sloops of war, one quarter of an inch in diameter; for frigates and ships of the line, five-sixteenths of an inch."

This is No. 0 and No. 1 Iron Wire, a pound of which will measure 6 feet, and if tinned costs 7 cents per pound—untinned 6 cents per pound. This is the price at which Messrs. Phelps, Dodge & Co. sell this kind of wire.—It comes in rolls of sufficient length for a lightning rod.

The fact that immense weight of metal in guns anchors, chain cables and shot, on board of public armed ships have never been known to withdraw the lightning from the iron wire conductors that terminate in water a few feet from the side of the ship, is evidence so conclusive that I will not add a word of argument to show the efficiency of this kind of protection.

A lightning rod for a dwelling house of ordinary size need not cost more than a dollar; or two or more rods at the same rate. All dwellings and other buildings, should be protected by such rods; these should terminate in water—in a well or cesspool or deep in damp ground. They should not be confined to the side of the building but should diverge from the roof, and may be extended to any convenient distance along a fence to reach water—they should rise above the comb of the roof ten feet.

Steamboats are rarely struck by lightning.—I have heard of but five, and only one of this number received injury and that to a limited extent. I have known but one warehouse containing iron to be struck by lightning.

Railroads have, in a few instances, been struck by lightning and the electric fire has been seen traversing the rails for a considerable distance, but no damage has been done to cars or engines by lightning, if we except the case of the bursting of an engine in Pennsylvania, during a thunder storm in 1845.

(*To be concluded.*)

Sport on the Rio Grande.

According to all accounts, the river is full of ducks and geese, which can be shot in any quantities. Deer, Bears, and Wolves abound on the banks, and are not so wild but that a good hunter can slaughter specimens of each in the course of a single day.

A Cold Insult.

Said Bill to Dick, "I wish to insult your wife,
But yet I would not dare do it boldly;"
Quoth Dick, "Just treat her to ice-cream,
By doing so, I'm sure you'll treat her coldly."

European Items.

Fifty years ago there were only five iron works in Scotland, comprising about fifty blast furnaces, which, together, produced 540 tons of iron per week. There are now 100 blast furnaces in action, which produce 12,000 tons of iron per week, 624,000 tons in the year—the value of which is about $10,000,000.

A gentleman of Liverpool is about to present Queen Victoria with a model of an oak tree in full leaf, and with the autumnal tints. It has been in progress nearly five years.

The "Wellington Brace," obviating the necessity of buckles, and can be extended or shortened with the greatest facility; and the "Golden Flax Cravat Collar," are among the new toilet articles advertised in the London papers.

It is stated that during the past year the police of Copenhagen picked up 685 persons,—one-fourth of them women, who were dead drunk in the streets.

In Great Britain, the Roman Catholics possess 622 churches and chapels, 14 colleges, 34 convents, and 8 monasteries. The number of their missionary priests is 818.

The Sheffield Iris states that neither sun, moon nor stars shone upon that town for the first thirteen days of the present year.

The Liverpool papers continue to tell of the immense cargoes of corn that arrive from America. It is believed to have been chiefly bought up by the speculators.

The Gateshead Observer states that the captain of a Newcastle trader was seized in a French port, and hurried before the authorities, because a stray copy of "Punch," was found wrapped round a bottle of brandy!

According to a writer in the Quarterly Review, out of 2,345 children in 15 Ragged Schools, 249 had never slept in beds!

The Cork Reporter pathetically describes the condition of Bantry, where mothers are to be seen clasping their dead children, whilst they themselves are eating grass.

Golden Eagle.

This powerful bird breeds in the recesses of the sub-alpine country, which skirts the Rocky Mountains, and is seldom seen farther to the eastward It is held by the aborigines of America, as it is by almost every other people to be an emblem of might and courage; and the young Indian warrior glories in his eagle plume as the most honorable with which he can adorn himself. Its feathers are attached to the calumets of smoking pipes used by the Indians in celebration of their solemn festivals, which has obtained for it the name of the calumet eagle. Indeed, so highly are these ornaments prized, that a warrior will often exchange a valuable horse for the tail feathers of a single eagle. The strength of vision of this bird must almost exceed conception, for it can discover its prey and pounce upon it from a height at which itself, with expanded wings, is scarcely visible to the human eye. When looking for its prey it sails in large circles, with its tail spread out, but with little motion of its wings; and often soars aloft in a spiral manner, its gyrations becoming less and less perceptible, until it dwindles to a mere speck, and is at length entirely lost to view. A story is current on the plains of Satscatchewan, of a half breed Indian, who was vaunting his prowess before a band of his countrymen, and wished to impress them with a belief of his supernatural powers. In the midst of his harangue, an eagle was observed suspended, as it were, in the air, directly over his head, upon which, pointing aloft with his dagger, which glistened in the sun, he called on the royal bird to come down. To his own amazement, no less than to the consternation of the surrounding Indians, the eagle seemed to obey the charm, for it instantly shooting down with the velocity of an arrow, it impaled itself on the point of his weapon!

A Fact for Rum-advocates.

A young man residing a few miles from Rochester was married to an interesting girl on Wednesday (two or three weeks since) and on Thursday went with his bride on a wedding ride to Rochester, got drunk and was carried to the Watch-house on Friday, (his bride returning broken hearted to her friends) was put in jail on Saturday, and brought up for trial on Monday, on which occasion the foregoing facts were elicited.

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NEW INVENTIONS.

Veneering Machine.

We have received from the inventor, Mr. John Dresser, of Stockbridge, Mass., a drawing and description of an excellent machine recently invented and put in operation, for cutting veneers from a round log, and that without any other waste or loss of timber than what is occasioned by reducing the log to a round form, and a small core in the center. From a single log of bird's-eye maple, three feet long and 20 inches in diameter, the machine will cut a single and perfect sheet of beautiful veneer, (a sample of which may be seen at this office) three feet wide and 300 feet in length, measuring 900 feet. The operation of cutting these veneers is so rapid as to keep a surveyor constantly employed in measuring the sheets. It may be understood that the log revolves on its axis centres while the knife or cutter is nearly stationary, but moves gradually towards the centre of the log at the rate of a sixteenth of an inch to each revolution of the log. We are not informed whether mahogany veneers may be cut with equal facility; but as native woods are rapidly coming into use for furniture, &c., we think the invention is of great value.

New Covering for Roofs.

We have now on hand (received since the publication of our last number, in which was an article on the subject) a specimen of newly invented cement, and mode of covering roofs, and which appears better adapted to that purpose than any thing of the kind which we have seen. The cement is elastic, fire proof and weather proof—at least the specimen, a roof model, has stood the test of six months exposure to the weather, and has been heated far above the boiling point, without the least apparent injury,—and can be afforded nearly as cheap as common lime plaster. The roof is first lathed, and plastered with a light loam, over which is laid the cement composed of coal tar and coal ashes, with a small portion of India rubber; and this cement penetrates and cementizes the loam, and the whole becomes very permanent. The inventor is Mr. Chas. Krause of this city, who has put in progress measures for securing a patent for the invention.

Improvement in Light Houses.

A gentleman in Oxford, Mass., (whose name we withold for the present) has submitted a drawing and description of a mode of furnishing light houses with the Drummond light, to be supported by gasses produced by *magneto electrical* machines, which are to be kept in operation by the power of water descending from an elevated reservoir, which reservoir is to be occasionally replenished by pumps operated by a wind mill mounted above the lantern. That such an arrangement is practicable there is no reason to doubt, though it might be attended with considerable expense in the first instance. We may present a more full description with an engraving in a future number.

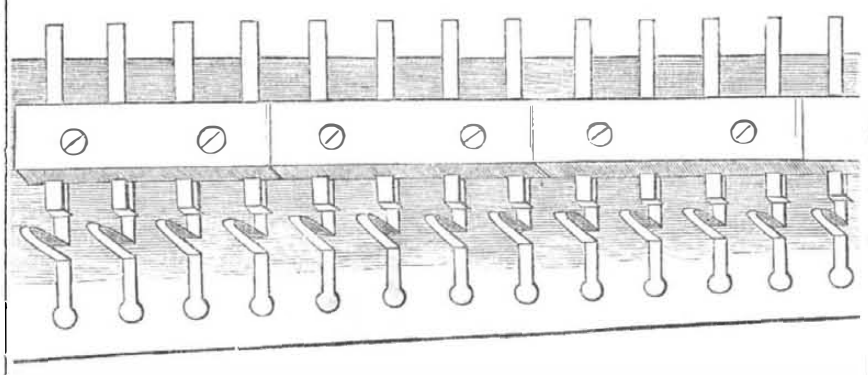
New Wood Screw Machine.

A machine has been recently put in operation in Brooklyn, of which the Eagle remarks. "It does its work in the most rapid and effectual manner of any bit of machinery we ever saw! By the plan hitherto, each screw had to be taken singly and "put through" the various operations requisite to its perfectness.—But the machine in question does the work by wholesale! It works its own way too; is susceptible of the application of steam power, and can be taken care of by one-tenth the usual attendance." We have not yet found and opportunity of examining this machine, and can not speak of its peculiar construction.

Rock-boring Machine.

Messrs. G. W. & J. Lee of Maiden Creek, Pa., have invented and put in operation a machine that will bore into common granite or other stone at the rate of five feet per hour, or one inch per minute, by the work of one man at the crank; of course, if steam or horse power was applied, it would accomplish large business. We have not been furnished with a full description of this machine, but expect to receive a model thereof, ere long, when we can describe it in full

IMPROVED MELODEON REEDS.



Messrs. N. B. Jewett & Co., of Worcester Mass., have recently invented and introduced a musical reed, surpassing in tone and durability, those in general use for melodeons, seraphines &c., an octave of which is represented in the above engraving. We need not give a particular description of the peculiar construction of the improved reed, as those conversant with the subject will readily understand it by the engraved representation. Messrs. J. & Co. are engaged in manufacturing æolian seraphine melodeons piano forte attachments, and will fully illustrate the excellence of their improved reed to all who may visit their establishment.

Improved Railroad Coupling.

A Mr. Byington of the U. S. Arsenal, has invented a self connecting and dis-connecting coupling for railroad cars, which is highly recommended. It can be set at any number of degrees so as to suit any or all *curves* or *switches*, on any of the railroads; but whenever a car makes any short turn, other than the curves or switches, it immediately disconnects itself and lets go; and should one car run off the track, this coupling immediately disconnects itself and lets the car go, while the balance of the train remains on the track. It is also at the pleasure of the conductor or brakeman to disconnect one car from another while the train is at full speed, and the locomotive, with a full head of steam applied to its propulsion.—Furthermore, it connects itself by running up one car against another without the aid of any assistance whatever.

New Mortising Machine.

Messrs. Davenport & Bridges, rail-car makers of Fitchburg, Mass, have recently put in operation a mortising machine operated by water power, and which will cut with ease and facility a mortise of any required width and depth. The machine can be adapted equally well to light or heavy work, only requiring a stronger frame and gearing when heavy work is required than for light. It works equally well in hard or soft timber, requiring only one hole to be bored in the centre of the mortise, to give the chisel a chance to make the first stroke, and this is done by machinery.

Improvement in the Cotton Gin.

Mr. Robert M. Livingston, of Mobile, has recently invented and secured by patent, an improved Gin, of which the following is his specified claim: "What I claim as my invention and improvement, is in the use of steel wire teeth moulded in plates of metal, (to be used in the place of the usual Gin Saw) for the purpose of taking off the fibre of the cotton from the seed.

A New Printing Press.

Hoe & Co., have invented and put into successful operation, at the office of the Philadelphia Ledger, a power press which achieves the wonderful result of working twelve thousand sheets an hour. Instead of arranging a form in the usual way, the types are "made up" in sections of a large cylinder, one revolution of which brings off four legibly printed sheets. The fastest press before known in this country can only work between three and four thousand sheets an hour.

Artificial Marble.

A discovery is stated to have been made at Charlottensburg, by which marble may be cast in moulds of any size, the marble being equal in quality to the purset Carrara marble. Several figures have already been cast of the size of life. The cost is stated to be one dollar a foot.

Mr. Blanchard's Invention.

The Boston Transcript speaks highly of Mr. Blanchard's ingenious invention for turning busts *in a lathe!* He has already turned one of Mr. Webster, and is now turning one of Judge Woodbury. This work is quite supererogatory; as politicians are already but too apt at *turning themselves*.

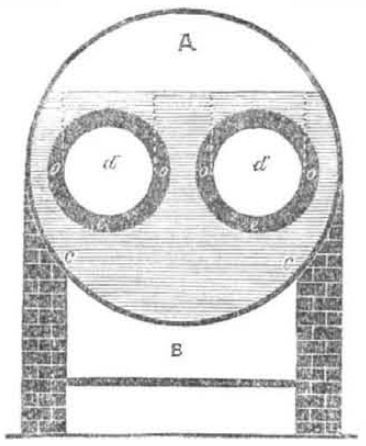
Emerson's Ventiliator.

We alluded to the invention in a former number since which we have learned that the apparatus consists of two conductors, each surmounted by a ventilator of different construction, one of which is designed to eject the impure air, and the other to introduce fresh air. These conductors, placed at the two extremes of a ship's hold, will cause a fresh current of air to circulate through the entire length of the vessel, by which means the cargo is preserved from decay in many cases, and the health of the crew preserved.

Portable Cottages.

There is said to have been established at Cincinnati, a manufactory of portable cottages, so constructed that while they constitute very comfortable dwelling houses, they can be readily transported from one location to another with little trouble or expense. We have often wondered that something of the kind had not been introduced. We shall allude to the subject again.

Dodge's Improved Boiler.



Mr. Editor.—It is my object on the present occasion to explain the true cause of steam boiler explosions, and that, too, upon philosophical and scientific principles. I shall endeavor to prove that those awful accidents which have been occasioned by the bursting of steam boilers, and which have generally been attributed to the careless and reckless conduct of captains and engineers, has been owing to the ignorance of a fixed and never changing law of nature, and which I wish fully understood. The law or principle is this: that all substances capable of sustaining their own individuality in water, and whose specific gravity is less than that of water, will, when immersed in water, seek a medium point in a vertical direction unless opposed by some power or agent, and will then always pursue the nearest possible way until it regains its vertical position. Now, I intend to prove that the fire places of steam boilers are kept from the action of water even when surrounded on all sides by the water in the boiler until they become so heated that their strength is reduced to such a degree as to cause them often to collapse and thus cause an instant explosions. And it is my object to explain by the above drawing the principal cause of explosion, and then introduce an improvement to remedy the evil. And first, I am to prove that the fire flues are kept dry even when the water is above them Let *o o o o*, represent the outer sides of the flues, then it will be seen that all the steam generated from these points would rise in a vertical direction indicated by the dotted lines. Again, all the steam generated from *o o o o* to *e e*, on both sides of the pipes, would have to pass round to points *o o o o*, and that too between the fire flues and the water, that being the nearest possible way of obtaining the surface. Again, let that portion of boiler first exposed to the action of heat be represented by *c c*; now upon the principle which has already been explained, all the steam generated from the surface of the boiler first exposed to the action of the fire under the fire flues would have to come in contact with the flues in its ascent, dividing at the under side of the boiler flues a part going up each side of the flues between the water and the flues, until it reaches the centre of the flue, when it would leave the flue and rise in a vertical direction, thus keeping the lower surface of the flue from the water as seen at *e e*, until they become so heated as to collapse and thus cause an explosion. And I have noticed in reading accounts of steamboat boiler explosions, that they generally occur after the boat has been stopped and has just started; this also leads me to think that my theory is correct, insomuch as the flues would become much heated and when the boat began to rock, it would so affect the water as to bring it suddenly in contact with all the lower surface of the flues, which having been kept from the water while the boat was stopped would now be heated to a very high degree, and would thus generate such an amount of steam as to cause an explosion. And does not this give a correct answer to the oft repeated question: why do not locomotive boilers explode as often as others? Is it not owing to the different sized flues used in them; for, if my theory be correct, the danger of a boiler increases as the size of the fire flues are increased. The objector may answer by saying, that if my theory be correct there would be more accidents than what occur—therefore I must be mistaken. To such I would say does the fact that so many people and buildings escape the lightning's fiery bolt argue at all against the existence of such an element, or of their liability to be struck down by its withering stroke? Does not the fact that some have been destroyed, prove beyond a doubt that there is danger? I would here say that I believe the one cause why there are not more explosions is found in the fact that the fire flues become filled in part with ashes where the draft is not strong, and being non-conductors of heat, in a measure wards off the danger; but who, I ask, are willing to risk their lives and property upon such a weak foundation which is liable to be removed at any moment. Any one may test the truth of my assertion, that steam does keep the flues dry, by inserting into a glass vessel of water, a rule in the form of an inclined plane, and then by the aid of a small bent tube force a current of air into the bottom of the vessel directly under the rule, when it will be seen to rise to the surface of the water between the rule and the water, and as long as the air is continued so long will there be a portion of the rule kept from the water. Now we have only to apply this to a boiler, the flues representing the rule, and the steam generated below them the air; now is it not plain the result would be as I have stated? By a little calculation it will be seen that the amount of heated surface liable to be exposed at once, is sufficient to generate such an amount of steam as to explode any boiler unless of unsual strength.

(*To be concluded.*)

Theory of Storms.

Professor Epsey proposes to add efficiency to his efforts, by the aid of the magnetic telegraph—an agency that must be strikingly serviceable in the prosecution of his interesting researches. By this means, in connexion with the information resulting thus far from his extensive inquiries, one of his chief objects will probably soon be attained—that of ascertaining when a storm of dangerous magnitude commences, so that preparations therefor may be made both on the seaboard and in the interior.

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NEW YORK, MARCH 27, 1847.

Liberal and Honorable.

It frequently occurs that Railroad Companies are unjustly censured on account of accidents which occur in the course of traffic on their roads; and it is but reasonable that they should have full credit for their liberality to those who are injured by such accidents. We recently noticed a series of casulties which occurred near Worcester, and by one of which a baggage master had his leg broken, and was otherwise injured; but in justice to the company it should be known that they not only pay all his expenses of medical and other attendance, but allow his salary to continue, and give free passage tickets to his friends who visit him from various directions. He is now in a fair way to recover and resume business in four or five weeks. The gentlemanly conductor of this (steamboat) train, and of whom honorable mention was made in connection with the wreck of the Atlantic, had also a narrow escape at the time of this accident.

The Influence of Horticulture upon the Human Character.

Dr. Wm. Darlington, in a recent address before the Chester County (Penn.) Horticulture Society, thus truly speaks of the influence of a taste for horticulture in preserving pure morals and refining the perception of beauty:

That the habitual association with interesting plants and flowers exerts a salutary influence on the human character, is a truth universally felt and understood. No one ever dreams of any possibility of mistake, in estimating the disposition of those who delight in gardens, rural walks, and arbors, and the culture of elegant shade trees and shrubbery.—Who ever anticipated boorish rudeness, or met with incivility, among the enthusiastic votaries of Flora? Was it ever known that a rural residence, tastefully planned and appropriately adorned with floral beauties, was not the abode of refinement and intelligence? Even the scanty display of blossoms in a window, or of the careful training of a honey-suckle round a cottage door, is an unmistakable evidence of gentle spirits and an improved humanity within. There may, possibly, be natures so gross, as to be incapable of perceiving the beauties of the vegetable creation—and altogether inaccessible to the influence of genuine taste—as it is said there are persons insensible to the charms of the sweetest music.—But I can only imagine the existence of such unfinished specimens of our kind, as there are *exceptions* which logicians say are the strongest proofs of the general rule. They must indeed be the veriest clods that ever fell untempered from "*auld Nature's 'prentice han'*." Shakespeare, as you know, tells us—

"The man hath no music in himself,
Nor is not moy'd with concord of sweet sounds,
Is fit for treasons, stratagems, and spoils."

Now, if such be the character of the man who is so unfortunate in relation to the pleasure of a *single sense*, what shall we say of him who cannot appreciate the delights of a rich and beauteous garden?—delights which appeal so directly to each of the senses, and minister so exquisitively to all the five! I should say, he was not fit even for "spoil," which I believe, is the lowest qualification recognized the present day.

The Inventor's Institute.

We have received letters from various sections on this subject, all of which express the highest approbation of the general principles proposed, and a readiness of the writers to become members and supporters thereof. Some days—perhaps weeks—will be required to complete the arrangements for the business of the Institute in this city, when notice will be given, and a meeting of inventors and mechanics of this city and vicinity will be invited, to whom the subject will be presented in a more explicit manner than what has been published on the subject.

Mechanics.

We have thought for some time past of offering a few reflections on this numerous class of the community, especially in regard to the position they actually sustain, and the position they should sustain in relation to the other classes of society. Their name is legion, and they are more or less identified with all the departments of business and life. They are the lever of Archimedes which moves the world. But are their importance and position duly considered and respected? we mean in the aggregate. We know that when some splendid luminary like Franklin shoots up from their sphere, and blazes through the world, attracting its astonished gaze—it lights up by its reflection the rank of mechanic, and confers, at least a temporary pride and dignity on the sphere whence the orb arose. But we know also that when a mechanic, by his industry and skill, or by a fortunate combination of circumstances, which confer no honor on himself, emerges on obscurity and poverty, and rolls amidst all the luxuries of uncounted wealth, he often seeks to forget his origin, in deference to the blind prejudices of society, and the dictates of a perverted and flattered heart, worse than cowardly, denies himself to his great family kindred, and turns up his pampered nose at the mere wood mechanic. This city, even amid its fashionable walks, is full of such pictures. The fact speaks more eloquently than words, that there is something radically wrong in the constitution of society—something false in the popular mind. Why should Mechanics, who combine and exhibit in their diversified range, the highest and most plastic energies of genius; on whose laborious, never-tiring skill, wealth and luxury depends, and to whose power pride is subservient for its swelling 'pomp and circumstance,' be treated as inferior beings, among the moving mass of the same humanity? Is it because their hands are harder or more stained or because their hearts are less capable of those sentiments and affections which soften and elevate society? If the former, the cause must be admitted; but we protest against the effect, as unnatural and unjust. We deny that the proposition contained in the latter alternative is true; but assert, on the contrary, that in this class, natural and wholesome affections of the heart are to be found. Merit should be the only passport to society and consideration: and the state of society will be artificial and disordered until merit shall be thus respected. We will admit that the inferior estimation in which mechanics are regarded, is to some extent attributable to their own fault. They do not sufficiently respect themselves. They do not assert and properly defend their just rights. Let them as a class, bestow more attention on their personal appearance and address—cultivate a greater dignity and polish of manner, and attend generally to those minor accomplishments, which constitute in the eye of a correct, not sickly taste, the true gentleman. They will thus commend themselves as the representatives of that skill and genius which they exhibit in their various departments, and be respected as such delegates, unencumbered by factitious impediments. We think we see in the movements of the age, a progressive tendency to the spirit of equality we advocate. It is not the *Agrarian* principle of equality *in spite* of dollars and cents! It is founded on the recognition of the *internal* man, in whatever guise he may be found—the valuation of the jewel in the midst of its repulsive incrustation—the discernment of the true ore, though deeply imbedded in the *common* earth. It is that test of equality to which the great Scottish poet alludes—

"The rank is but the guinea's stamp,
The man's the *gold* for a' that."

The operation of our democratic institutions is helping on this moral consummation. It is planting on every side free Public Libraries, and other means for the developement and improvement of the mind and heart, and offering to all, facilities in spite of the disparities of external advantages, to achieve an equality with the highest standards of mental and moral excellence. We say then to the mechanic, lift your eye to this standard, and keep it ever in your view. Do your part in the movements of the day, and compel by your efforts, a recognition of your just position.—*Gazette of the Union.*

Shameful Negligence.

A correspondent of the Vermont Chronicle complains of many egregious errors which have appeared in a stereotype edition of the Bible, printed and circulated by the American Bible Society, and among which are the following:

I. Kings 3: 20. And she arose at midnight and took my son from beside me, while *mine* [thine] handmaid slept, and laid it in her bosom, &c.

II. Chron. 15: 4. But when they in their trouble did turn unto the Lord God of Israel, and sought him, he was *fond* [found] of them.

I said b 51: 15. But I am the Lord thy God, that divideth the sea, whose waves roared; the Lord of Hosts is his *shame* [name.]

John I: 31. And I *know* [knew] him not.

The Society should recall and destroy the whole edition and replace them with new.

Scientific Discoveries of the Age.

Man has been revealed to himself, in this present age—his internal structure developed; and the laws of his physical being made known; almost all that we know of ourselves internally, has been shown to us in this age; the grand truth of the circulation of the blood—the functions of most of the inward organs and their connection with and relation to each other—the prevention and mitigation of diseases—the improved condition of society,—the application of infinite power—of steam to machinery, to locomotion, to navigation—communication by electricity—the addition of several planets to our system—the discovery of the nature of the nebulæ—the true hypothesis of the milky way—the calculations of the orbits, and the periods of a dozen comets—revealed by the microscope, a new world of life before totally unsuspected—and many other discoveries, place the present age in most favorable contrast with the six thousand years when the veil of ignorance hid these both from the eye and mind of man—and we may add, by similar contrast, reveal the *depth* of him who declares the scientific character of the age superficial.—*Essex Constellation.*

Mechanic's Advocate, Esq.;—

Your last number was received in due season:—to your question concerning the electro magnetic machine, we answer "yes" decidedly—on the subject of the P. S. we think it a "pity we wak'd you so early;" but what do you mean by "*shears?*" Surely we are no *tailor* at cabbaging; nor do we use shears in extracting from the "Advocate,"—we employ a *hoe* for that. Well, go ahead—you are bound to flourish,—we rejoice in your *smart*-ness, and our engineer thanks you for compliments.

Sulphate in Batteries.

For the benefit of a respected cotemporary who was recently instructed to use sulphate of zinc with dilated sulphuric acid as an existing fluid in galvanic batteries, we would suggest that sulphate of soda, instead of sulphate zinc, was probably intended by his informant. The latter salt being of all others the most likely to prevent the action of the acid on the zinc.

Parley's Magazine and Merry's Museum.

No. 4 of Vol. 13 of this combination of literary, historical, musical and comical talent, is received; and when our readers are informed that the number before us contains at least 15 illustrations, consisting of such engravings as were never seen before, besides music, and that the price of the work is only one dollar per volume of 12 monthly numbers, it is presumable that they will all subscribe for the work without further recommendation. Published by G. W. & S. O Post, No. 5 Beekman St.

Ranlett's Architect.

In this age of puffatory praise and commendation, it is impossible to do justice to this work, short of presenting it entire to every reader. It is probably the cheapest scientific work every published; and worth more than cost for ornament, independent of its indispensible utility,—that is, to builders. The number before us (No. 6) contains eight large (15 by 10) lithographic prints, several of which are splendid perspective views, including an Anglo-Grecian Villa, and other cottages, elevations, ground plans and sectional architecture. Published by W. H. Graham, Tribune buildings; 50 cents per number.

Large Timber.

The Lockport Democrat mentions the following specimens of New York timber:

"Mr. John P. Smith, one of our timber dealers, cut and took to market, from the town of Hartland, in this county, an oak stick, squared 82 feet long, averaging 22 inches in diameter.

Mack & Van Valkenburgh, have now out a stick 68 feet long, squared, the greatest diameter of which is *six feet.*

The same timber dealers have now 4 sticks of singular uniformity, cut but little over a mile from this village, 75 feet long, that squared 25 inches.

A tree was cut a few years since on the Tonawanda creek, the stump of which will now verify our statement, the first stave-cut of which was *seven feet* diameter.

There is now in this village the section of an oak stick, which originally had in it, after being squared, 412 cubic feet!

Among some plank once taken from timber that grew in this town, and carried to the city of London for exhibition, there was a section of black walnut, 80 feet long, and 3 inches thick; greatest width clear of the bark and wane, 5 feet 5 inches, and a section of oak, same length and thickness, 5 feet and 3 inches diameter.

A black walnut tree one grew at the head of the Locks, in this village, a saw log from which 14 feet long made 1,663 feet of inch boards.

Ragged Schools in London.

A class of philanthropists in London contributes to the support of schools for poor children. They are called "Ragged Schools" and are not inappropriately named. As a specimen of the class of Ragged School pupils, we give the following: A lad was asked his name, which he gave. 'Where do you live?' inquired the teacher. There was no answer, but the boy turned his face away. A little fellow of the same class remarked, 'Please, sir, he don't live nowhere.' 'Indeed, how is that?' 'His father and mother are both dead, and he has had no one to take care of him for two years. He sleeps under carts or sheds, or wherever he can.' He was nearly naked, the upper part of his body being covered with a small piece of brown Holland. "He always comes down our street at night,' observed a boy, 'and I give him a bit of my supper, or he'd have none.' 'That's true,' said another, 'and though he's so poor, he keeps himself clean, for he goes down to the river early in the morning, and washes himself."

Heavy Guns.

The two guns which are to be placed on board of the bomb-schooners now fitting out at the Charlestown Navy Yard, weigh, respectively, 15,270 lbs., and 15,328 lbs. They are seven feet in length, and seven feet, also, in circumference of breach. They throw shot weighing 110 lbs.

Magnetic Telegraph.

Mr. Bravo of The Commercial Rooms, New Orleans, is appointed agent in that city for the Western Telegraph Company. The sum only of $75,000 is required to carry the line from New Orleans through the Western States of Cincinnati, and thence to Pittsburgh, and so on to Philadelphia.

To New Subscribers.

Those subscribing to the Scientific American will be furnished, if desired, with all the back numbers of the present volume. Bound together at the end of the year, they will form a handsome and valuable work.

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The Origin of Lowell.

As connected with this fact, and as constituting the germ of the present city of Lowell, the following, from the pen of Mr. S. Appleton, of Boston, may be thought interesting :

"Mr. Patrick T. Johnson and myself were among the original associates who established the Boston Manufacturing Company of Waltham, in which the power loom was first brought into successful operation on this side of the Atlantic. The success of that establishment had satisfied us that the time had arrived for undertaking the manufacture and printing of calicoes, and in the summer of 1821 we made an excursion into New Hampshire, in search of a suitable water power.—Soon after our return, the idea was suggested to Mr. Jackson of purchasing the stock of the Pawtucket Canal on the Merrimack, together with such lands as may be necessary for using the great water power which might be created by its enlargement. He communicated the same to me. After ascertaining that Mr. Kirk Boott was willing to join us in the enterprise, and become the manager and agent to carry it into effect we proceeded through trust worthy agents, to purchase the canal and the most important adjoining lands. It was not till these had been secured, that we thought proper to visit the scene. I well recollect the first visit. It was in the month of November, 1821, and a slight snow covered the ground.—The party consisted of P. T. Jackson, Kirk Boott, Warren Dutton, Paul Moody, John W. Boott and myself. We perambulated the grounds, and scanned the capabilities, and it may be worth recording, that so sensible were we of its future importance, that I distinctly recollect the remark made by one of the party, that some of us might possibly live to see the place contain 20,000 inhabitants. We proceeded with new associates to organize the Merrimack Manufacturing Company, with a capital of $600,000, to which corporation the whole property was conveyed. The enlargement of the canal was finished during the two following summers, and on or about the 1st day of September, 1823, the first water-wheel performed its revolutions. The city now contains, I am told, upwards of 30,000 inhabitants. I certainly look back with satisfaction upon the part I have had in leading to this result. I do not say this with any relation to pecuniary interest. I could not say it did I not conscientiously believe that the introduction of the cotton manufacture has added greatly to the mass of human happiness to those immediately concerned in it, as well as to the aggregate wealth and prosperity of the whole country. I could not say it, did I perceive in the system any tendency towards a relaxation of the moral purity which has ever been a characteristic of our beloved New England. My mind was early turned to a consideration of this question. I could never perceive any just ground for the opinion which formerly prevailed extensively, that occupation in manufactories was less favorable to morals than other manual labor. This opinion has, I believe, given way before the light of experience. 'Tis the elevation of all labor above the right of a mere subsistence, which gives it character and standing in society, and constitutes the elementary difference between American and European labor. That this elevated position may be strengthened and perpetuated by our institutions, is my most ardent wish.

First Newspapers in New England.

We were a short time since, looking over the published "Collections of the Massachusetts Historical Society," for the year 1798, when we noticed a communication to the President of the said society by one of its members, containing an account of the first newspapers published in the colony, which may not be without interest to our readers. It appears by this writer that the first paper published was the Boston News Letter, which was printed by B. Green, Newbury st, for John Campbell, Postmaster. The Boston Gazette was the next paper published, printed by S. Kneeland, for P. Musgrove, Postmaster. The New England Courant, which Dr. Franklin tells us his brother undertook against the advice of his friends, who were persuaded that the country could not support another paper, was published in the summer of 1721. Several files of these papers, of different years we believe are now in possession of the Society. Not long after the issuing of the Courant, the News Letter fell into other hands, and Mr. Green commenced a paper called the Weekly News Letter. In March, 1727, the first number of the New England was issued, printed by S. Kneeland, in Queen street, who was afterwards joined by T. Green, and the paper was published by them jointly for nearly 25 years. In the year 1731, Sept., the Weekly Rehearsal commenced, printed by J. Draper, and edited by Jeremy Gridley, Esq. It lived only one year. Thomas Fleet, at the Heart and Crown, Cornhill, who printed this paper during the latter part of the year, soon after it ceased, issued the Evening Post, which he continued till April, 1775.—*Ex. paper.*

Bordentown

The seat of the late king Joseph Bonaparte, is the subject of an interesting paragraph in a letter to the editress of the Transcript. The mansion is described as consisting of a suite of large lofty rooms in which are rare and valuable paintings, but which are mostly filled with "worn-out gewgaws and trumpery. The carpets, some rich and handsome, are faded and threadbare—the curtains hanging in rags—the chairs and sofas such as we meet with in second rate hotels." In every room there are portraits and busts of Napoleon, "plainly shewing who had been the presiding *god* among the inmates. Here," continues the writer, "twenty-five years ago, the exiled king planted his sixteen thousand trees per annum, stocked the park with deer, laid out five miles of broad roads, arranged beautiful fountains—raised the lofty chateau, filled it with expensive furniture and choice works of art—then came the distinguished guests—and then, I suppose, the merry, happy parties; but where are those gay personages now? Poor Joseph lies mouldering in the dust—his broad roads are covered with weeds—his jet d'eaus have ceased to throw up their sparkling waters—his deer have all departed—the once favorite home has become a dreary tenantless pile of brick and mortar—and like all large private establishments, in our country, will soon be knocked down under the auctioneer's hammer." Glorious Royalty!

Great Snow.

The following account of tremendous snow storms in the year 1777, is from the History of Lynn, by Alonzo Lewis :

"Two great storms, on the twentieth and twenty-fourth of February, covered the ground so deep with snow that people for some days could not pass from one house to another. Old Indians of an hundred years, said that their fathers had never told them of such a snow. It was from ten to twenty feet deep, and generally covered the lower stories of the houses.—Cottages of one story were entirely buried, so that the people dug paths from one house to another under the snow. Soon after a slight rain fell, and the frost crusted the snow; and then the people went out of their chamber windows and walked over it. Many of the farmers lost their sheep; and most of the sheep and swine which was saved, lived from one to two weeks without food. One man had some hens buried near his barn, which were dug out alive eleven days after. During this snow, a great number of deer came from the woods for food, and were followed by the wolves, which killed many of them. Others were killed by the people with guns. Some of the deer fled to Nahant, and being chased by the wolves, leaped into the sea and were drowned Great damage was done to the orchards by the snow freezing to the branches, and splitting the trees as it fell."

Dreadful Shipwreck.

The Royal Mail Steamer Tweed, Capt. Parsons, left Havana on the 9th of February for Vera Cruz, having 58 passengers and a crew of 91 men—in all, 149 souls. At half past 3 o'clock in the morning, February 12th, while going at full speed, she suddenly struck with tremendous force on the rocks of the Alacranes, (Yucatan), and in less than twenty minutes, she sunk entirely! Upwards of 80 of the company perished, while others clung to the rocks for five days, when they were relieved by the brig Sarah & landed at Havana

NORWICH, CT., MARCH, 10, 1847.

Mr. Editor:—

The following is a description of certain improvements in Locomotive Engines, for which I wish to obtain letters Patent, if the invention has not been in use before. 1st, the end of the boiler beneath the chimney is prolonged beyond the flues, being formed exactly like the fire box. The heated air and flame passes through the flues into this box escaping at the bottom and passing on the outside to the chimney. The advantage of this is that the heated air instead of passing from the flues directly into the chimney, has to pass through the box and around the outside giving out most of its heat to the water before reaching the chimney. An additional quantity of fire surface is obtained without increasing the length of the engine this addition occupying the place of the usual smoke-box or smoke-arch. 2nd, the air which supplies the combustion is made to circulate around the chimney, and enters the fire in a heated state. This experiment I have tried by means of a one horse power stationary engine, and find it produces a saving of fuel. The only disadvantage is that the draught is somewhat diminished. 3d, the construction of the safety valves is such that the steam which passes through them, instead of escaping into the air goes to heat the water in the tender.—4th, a cylinder two feet or more in diameter is placed upright on the forward part of the engine, having at the top a pipe which communicates with the boiler above the surface of the water; also another which connects the bottom of the cylinder with the boiler below the surface of the water. This pipe should have the end which is attached to the boiler, a little higher than the other, and if this be the case there will be no danger of the water in the cylinder foaming, as it can be heated only by contact of steam with the surface. The water in this, standing at the same height as that in the boiler, a float placed in the cylinder would never be affected by foam within the boiler, and might be made to regulate the supply of water forced into the boiler by the pumps, or by opening and shutting a valve, admit steam to work a steam pump. In this case the feeding apparatus will work when the engine is still. The cylinder float &c., being without the boiler, should the feeding apparatus cease to operate from any difficulty, it can be got at, and repaired while the engine is in motion. It cannot be affected by foam which is an advantage over a feeding apparatus placed within the boiler. I have intended building a working model of the machine. If it works well, would there in your opinion, be a demand for it, sufficient to pay for the expense of patenting it. Yours, &c.,

ELISHA AYER.

ANSWER. Yes, certainly.—ED.

LOCKPORT, 3d mo. 8th, 1847.

To the Editor of the Scientific American.

Dear Sir,—I find in your valuable publication of 2d mo. 27th, an article on the subject of "Evaporating in Vacuo," over the signature of "A Subscriber," in which I think the author labors to sustain himself upon false premises, and which ought to be corrected: for I contend that the pressure of the atmosphere is the greatest obstacle to overcome in producing evaporation; and the only obstacle which prevents many liquids from existing as vapors, at ordinary temperature. For instance, take a common saucer, in which is a small quantity of ether, or alcohol, and placing it under the receiver of an air pump, proceed to exhaust the air; in a few movements of the piston you will find a mist arising therefrom, and long before a perfect vacuum is obtained the ether or alcohol will disappear and assume a gaseous form. Again let the air in, and it will return to its liquid state, and water will boil in a vacuum at the temperature of 329 F. From these and other similar experiments, it is evident that there is a loss of fuel sustained in evaporating in the open air, equal to that which would overcome a pressure of 14 1-2 lbs. on every square inch of the surface of the liquid, and it has been ascertained that to overcome this pressure, it requires 140 F., which is the loss of heat sustained. Again, the writer says that steam or air is more rare at a temperature of 100 than at 212, and also that it is lighter and less elastic at the former than at the latter. This I think is also erroneous; for if we take a bladder that will hold, say half a gallon, and put in it one pint of air at the temperature 100, note the weight thereof, and then (having secured the neck air tight,) bring it to a higher temperature, it will be found to occupy a much larger space, and if we continue the heat, the pint of air, at 100 will be found to fill the bladder and the whole weight will be no more than at first, although it occupies four times the space and consequently is four times as rare.

Respectfully yours, T. H.

REMARKS.—The arguments in the foregoing communication, although generally rational, bring no new light to our own mind on the subject, as might have been understood by our brief remarks on the occasion of the former communication above referred to. "Subscriber," if he is a true subscriber, will reconsider his theory.—ED.

TO CORRESPONDENTS.

"J. A. G."—Your poetic contribution will appear next week.

"T. J. H."—No better substance is required for filtering water in small quantities, than a plate of unglazed stone-ware composition;—if this cannot be obtained, five or more layers of fine cambric, with alternate layers of straw paper, will answer about as well. For filtering large quantities, a horizontal flooring is required, constructed of parallel beams or sleepers two feet apart, and crossed with strips of boards two inches wide, arranged edgewise and half an inch apart. These are to be crossed with a layer of straw two inches thick and covered with coarse muslin (cotton sheeting) over which is placed a layer of common beach sand two inches thick. Over this should be spread a layer of pulverised charcoal one inch thick, and secured in its place by another layer of sand,—coarse sand or gravel. The floor must be enclosed by walls of timber and plank of the required height to suit convenience, or according to circumstances; it being evident that the deeper the water within this cabical cistern, the more rapid will the filtration proceed.

"W. H. A. of W."—Your question "whether an electro-magnetic engine can be employed to *advantage* to drive machinery," is rather indefinite, as much depends on the kind of machinery required to be driven. We have had a galvanic engine constructed and on hand for several months, but a constant press of other business has occasioned delay in putting it in practical operation. We have now made arrangements, however, for *time* to test its power, and shall report accordingly. We have satisfactorily ascertained, however, that this power may be used with advantage in driving lathes, drills, knitting or braiding machines &c., and we shall employ this in driving a cord-making machine. But we have no anticipation that this power will ever supersede steam for heavy work.

"D. T. B. of H."—Some old mill men still persist in the averment that a saw mill cuts more boards, and consequently saws more rapidly in the night than in the day time; but no natural law has been discovered, which would induce the opinion that such is the fact. The probability is, therefore, that the excess of business in the night season, is owing to less detension for meals, preparation and conversation; and perhaps partly to the extra length of the nights in the season—winter—in which this business is principally performed.

"A. D. W. of W."—Your request is very reasonable: but as we are rather short of paper, we cannot write out and send by mail the intelligence you require, unless you send us enough to buy the paper therefor required.

"A. W. B. of R."—You will find the intelligence required, under the head of "Curious Arts." The corn planter will be inserted in next number.

"H. M. A. & B. M."—The main subject of your communication, is out of our line. Intelligence on the other subjects will be given as opportunity occurs. We have passed your letter to the office of the "Farmer and Mechanic."

"J. P. E. of M."—The points of information which you require on the subject of the best rules and proportions of electro-magnetic apparatus, have never yet been established nor discovered by first philosophers. The subject

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is very intricate, and difficult to reduce to rules. But many are engaged in experimenting and may eventually arrive at conclusions more definite. We should like to hear more about your discovery.

"D. F. P. of D."—We presume there is no existing patent in this country on any machinery for pressing melted metals into moulds, though it is evident that some apparatus of the kind is in use in Europe.

"G. B. S. of B."—(You should have given your full name.) Air springs for carriages have been invented and patented five years ago,—by Alexander Connisen. They succeeded very well in experimental test, but have not been extensively adopted.

"E. A. of N"—Will find place next week.

"L. N. L. of G."—The rotary bellows, of the size you mention, will cost about $25, and can be made at reasonable notice; but none of them are ready made.

"S. J. H."—It is difficult to procure intelligence on so small a subject as that concerning which you enquire.

"J. B. of M."—No further intelligence from Springfield.

"D. P. Q. of L"—Having frequently received similar applications, we would say once for all, that no travelling agents are employed for this paper, under present arrangements.

"M. G,"—Will be answered by mail.

"J. R. C. of L."—We find several excellent points in your plan for a printing telegraph, which will eventually be adopted. Our first machine for this purpose is not yet ready for trial,

"G. W. L."—We cannot satisfactorily as certain whether your machine has any precedent until we see a model or full drawing.—We believe it is original.

"E. S. 2d."—Your plan for sub-marine exploration is not new. Your Patent Office business is nearly completed.

"J. C. of St. A." "R. M. G. of T," and "A. L. B. of A,"—Please be patient.

"J. W. O."—We think your invention valuable, and would recommend that you furnish an engraving thereof, which would cost not exceeding three dollars. The subject of rolling floats was fully answered several weeks since.

"W. S. N. of M."—We see no objection to your plan of rotary engine; but we cannot notice it with propriety, without the illustration of an engraving. The cost of engraving would be only $3, and you may think it for your advantage to furnish it. The former letter to which you allude, was received too late for notice in connection with that subject.

"E. A. S. & S. D. H."—You are probably aware that several different plans of rotary engines, have been constructed with curved steam channels and sliding projecting floats, projected alternately by a central camb. But your introduction of levers with friction wheels at the ends thereof, is original, and may succeed well, though you will find it requisite to make the lifts of your camb more gradual, that the float or blade may be projected more gently. The principal difficulty in all similar wheels, consists in the leakage of steam between the wheel and the steam channel segment, and the excessive pressure on one side of the wheel and its bearings. You may admit the steam on opposite sides, however, and thus evade this objection. You will probably succeed.

"S. K. F. of M."—Instead of sending your package by mail as you desired, we have forwarded it per Adams & Co.'s Express.

"W. B. C. of M."—Your letter is received and contents noted. Will answer you soon.

"J. H. A. of A."—We can furnish you with Bagley's Gold Pen and extension holder for $3,50.

"W. A. P. of S."—The numbers you desire of the first volume cannot be had. We have one complete set of volume 1 of the "Scientific American" that can be had at this office for $5 (bound.)

"S. J. W. of Murfreesboro', N. C."—We procured the article you desired, and forwarded it by mail.

In 1785 Troy, N. Y., contained but two dwelling houses and 16 inhabitants. Now it contains about one quarter as many people as Boston.

A Decided Compliment.

While Mr. W. A. Ashe, (of the firm of Ashe & Goulette, John st.) was finishing the painting of a forest scene, in a room in Chatham street in preparation for a new society called "The Foresters," on Thursday last, one of the windows being open, a bird flew in, and made every effort to alight on the branches of the painted trees, until becoming tired it was caught by a person present.

Perpetual Time Teller.

This is the name of an elegant and useful article, both ornamental and mechanical, neatly set with frame and glass, and readily shows the day of the week or day of the month for a long series of years, and is very convenient for ascertaining uncertain dates. It also shows the eclipses and days of the new moon. It is admirably calculated to amuse while it imparts instruction, and for its utility, should have a place in every office, and place of business, as well as in families.

Answer by Mail.

Near twenty of our correspondents have requested "*answers by mail*," (as if they supposed we had nothing else to do) though their respective subjects evidently require no such answer. When answers by mail appear necessary, we do not decline, but those who require us to use up a dollars worth of time in procuring, and writing special intelligence may occasionally understand a gentle hint on the subject.

Hats vs. Boots.

We last week spoke of Mr. Dick of 109 Nassau St., as making the best boot of any manufacturer in this city. We would now reverse the extremes and call the attention of our readers to the card of Mr. Knox in another column who we believe as far excels the majority of Hat dealers in this city as does Mr. Dick in boots, and from the constant rush at his establishment (which is but one door from us), we believe the public equally well appreciate it.

ADVERTISEMENTS.

☞ This paper circulates in every State in the Union, and is seen principally by mechanics and manufacturers. Hence it may be considered the best medium of advertising, for those who import or manufacture machinery, mechanics tools, or such wares and materials as are generally used by those classes. The few advertisements in this paper are regarded with much more attention than those in closely printed dailies.

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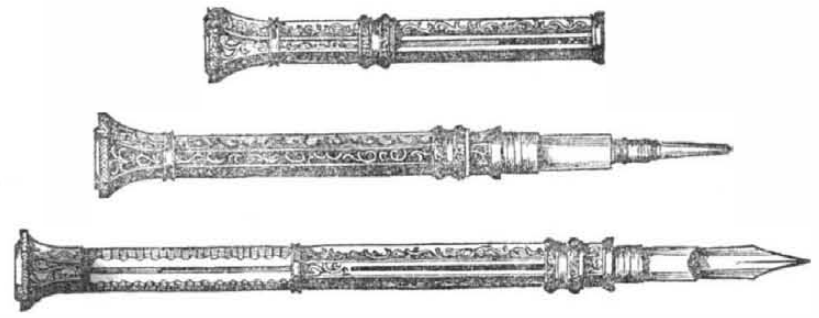

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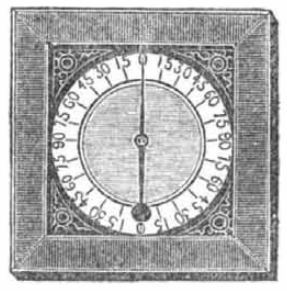
In the short space of 2 3-4 inches is contained a Pen, Pencil, and a reserve of leads, and by one motion slides either the pen or the pencil out and extends the holder to six inches, which is but little more than half the length, when shut up, of the common pen holder, but when extended is one fourth lon ger. This article is secured by two patents, and the Manufacturers are now ready to receive orders for them in any quantity, either of Gold or Silver, together with his celebrated ever pointed Gold Pens, which need no proof of their superiority exeept the increased demand for the last six years, and the numerous attempts at imitation.

A. G. BAGLEY, No. 189 Broadway.
New York, Sept. 1, 1846. o24 tf

Plumb and Level Indicator.



THE UTILITY of this invention so far exceeds the expectation of the inventor that he has been induced to engage in the manufacture of them to a large extent. It is understood from the engraving, that the proper position of the instrument is vertical, and that the weight of the ball will keep the index in a perpendicular position, so that either the bottom or side of the frame being placed against a horizontal, vertical or oblique surface, the index will show its inclination, (if there be any) in degrees.

Besides its utility, the Indicator possesses a share of elegance, consisting of a neat mahogany frame 9 inches square and glass, encasing a lithographic dial with an appropriate picture in the centre, and the movement is so free that a variation of one fourth of a degree is indicated. They may be sent to any part of the U. S. by Express.

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Dr. S. B. SMITH'S Torpedo Magnetic Machine.

THE CURES PERFORMED BY THIS NEW and singular machine which obtained the premium and medal at the Fair of the American Institute, are multiplying rapidly throughout the United States. A few among the many cures are hereunto annexed:

State of New York, City of New York, SS.—On the 16th day of February, A. D. 1847, appeared before me Doctor S. B. Smith, who being by me duly sworn, did depose and say that the following certificates and extracts from letters are each and every one of them true as received from the several persons whose names are thereunto attached, and that the same are a portion of the many testimonies of the cures by his Magnetic Machine.

Affirmed before me, this 16th day of Feb. 1847.
DAVID S. JACKSON,
Acting Mayor of the City of New York.

Cured of the Dropsy, Jaundice, and Contraction of the Leg: Sarah Sanger, 154 Delancey st., N. Y.

Cured of Lock Jaw: A case under the care of A D. Bacon, M D., Annisquam, Mass.

Case of Scrofula and Palpitation of the Heart: Two of Dr. Smith's own children, the scars still to be seen.

Cured of Spinal Complaint and Weak Eyes; Cases attested to by H. Peck, New London, Huron County, Ohio.

Cured of Rheumatism: Several cases attested to by J. Miller, of New London, Ohio.

For further particulars relative to the wonderful cures performed by these wonderful machines, we would refer you to the inventor, who has original letters from those cured, that he would be pleased to show at his office.

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Foster's Window Shades.

THE NEW (intended) PATENT FRICTION WIN DOW SPRING, recently invented by G P. Foster of Taunton, Mass. is now ready and for sale as below. It consists of a spring attached to the sash made to bear upon the inside of the window frame, and thereby holds the sash in any position with equal strength of a cord and weight.

These convenient springs have been tested and are known to supersede every other spring yet invented, for convenience, while, for durability, they will last much longer than any kind now in use.

They may be seen at the hardware store of W. N. Seymour & Co. No. 4 Chatham Square, and may be had upon application to James Lancaster, Agent for this city, at the same place, who will give full instructions in adjusting them. m6 4t*

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THE subscriber will furnish to order his Improved Cotton Willow and Wool Picker. It is warranted to do more work and much better in quality, with less outlay of power than any other machine in use, also the repairs required are much less on the machine itself and the succeeding machinery, the cotton or wool being so perfectly opened there is much less strain upon the card, clothing, &c., &c. It has been introduced into more than 60 of the best Mills in New England and quite a number of them have stated to me that they save the expense of the machine in a few months in WASTE ALONE, when much stock is used. EDMUND BACON,
Superintendant of Portsmouth, N. H.
d12 6m* Steam Mills.

GENERAL PATENT AGENCY.

THE subscriber has established an agency at his warehouse, 12 Platt street, New York, for the protection and general advancement of the rights and interests of Inventors and Patentees.

The objects of this agency are more particulary to aid and assist Inventors and Patentees in effectird sales of their inventions and of goods and ware made therewith—and also for the sale and transfer of Patent Rights.

Arrangements have been made with a lawyer familiar with the Patent Laws, who will attend to the legal branch of the business upon reasonable terms Satisfactory references will be given. Applications may be made to the undersigned personally, orb letter, post paid. SAMUEL C. HILLS,
j2 3m* General Patent Agent.

Branwhite's Patent Color Discriminator.

☞ This ingenious invention consists of a neat box in which are arranged in a scientific manner, all the most brilliant colors, THIRTY FIVE IN NUMBER, represented by as many convex discs of the FINEST SILK. Each disc bears a number referring to an explanatory scale. The attention of storekeepers, milliners, and indeed all who have occasion to vend or purchase colored articles of any kind, is respectfully invited to this new and valuable discovery. More trouble can be saved by its use in ONE DAY than four times the amount of its cost. For sale, whole sale and retail, at the office of the Scientific American 128 Fulton st., 3 doors from the Sun Office.

They may be sent by Express, to any part of the United States. oct31

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ZENAS C. ROBBINS,
Mechanical Engineer and Agent for procuring Patents.

WILL prepare the necessary Drawings and Papers for applicants for Patents, and transact all other business in the line of his profession at the Patent Office. He can be consulted on all questions relating to the Patent Laws and decisions in the United States or Europe. Persons at a distance desirous of having examinations made at the Patent Office, prior to making application for a patent, may forward (post paid, enclosing a fee of five dollars) a clear statement of their case, when immediate attention will be given to it, and all the information that could be obtained by a visit of the applicant in person, promptly communicated. All letters on business must be post paid, and contain a suitable fee, where a written opinion is required.

Office on F street opposite Patent Office.

He has the honor of referring, by permission, to—Hon. Edmund Burke, Com. of Patents; Hon. H. L Ellsworth, late do; H. Knowles, Machinist, Patent Office; Judge Cranch, Washington, D. C.; Hon. R. Choate, Mass., U. S. Senate; Hon. W. Allen, Ohio, do; Hon. J. B. Bowlin, M. C. Missouri, Hon. Willis Hall, New York; Hon. Robert Smith, M. C. Illinois; Hon. S. Breese, U. S. Senate; Hon. J. H. Relfe, M. C. Missouri; Capt. H. M. Shreve, Missouri. j23

BLACK LEAD POTS.—The subscriber offers for sale in lots to suit purchasers, a superior article of BLACK LEAD POTS, that can be used without annealing. The price is low, and founders are requested to make a trial.
SAMUEL C. HILLS,
j2 3m Patent Agent, 12 Platt street.

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THE undersigned, Forwarding and Commission Merchants, located at Harrisburg, the seat of Government of Pennsylvania, solicit consignments of Groceries, Merchandise, Domestic Manufactures, and useful Patent articles.

They are in the midst of Flouring Mills, Forges, Furnaces, Coal Mines, Canals, Rail Roads, and one of the best agricultural districts in the Union.

☞ One of the undersigned is a machinist of many years experience, and will give personal attention to patent machinery.

Letters post paid will receive immediate attention.
FUNK & MILLER
Harrisburg, Pa., Feb. 14. F20 13t*

Engraving on Wood

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CURIOUS ARTS

Japanning Black.

It is the case in this as in other arts and trades, that different workmen have different modes of operating, in some particulars; though on the same principle. In the process of japanning coarse and indifferent articles, as practised in some hardware manufactories, boiled linseed oil is the only blacking material used. The oil for this purpose is first boiled for several hours, and until, on cooling, it will assume the consistence of varnish. This oil is brushed in a cold state, over the work, which is then placed in the open air till the oil has begun to become adhesive. It is then placed in an oven prepared for the purpose, (a common cooking-stove oven will answer) and a gentle heat applied, but not raised above 300° until the oil has become nearly dry; after which the heat may be increased gradually until the oil becomes a full black. It is then withdrawn and allowed to cool gradually. For more delicate work, instead of oil, a solution of gum shellac in alcohol is used, and managed in nearly the same manner, the process being varied according to the nature of the articles, the construction of the oven, &c., as dictated by the experience of the operator. A japan varnish for this purpose may be made by boiling shellac in oil; or for an extra dense black, a solution of asphaltum in spirits of turpentine may be used, or a compound of all these ingredients together.—But when asphaltum and spirits are used, the heat of the oven must be more cautiously applied. With judicious management, a dense black may be produced in 15 or 20 minutes, though, some times the articles to be japanned are allowed to remain in the oven several hours. When plates are to be japanned, they should be carefully placed in a horizontal position. If the heat is applied too strong at first, it will occasion wrinkles in the surface; and if the work is over heated in finishing, the black will be charred and will not adhere. A little experience will satisfy a practitioner on these points.

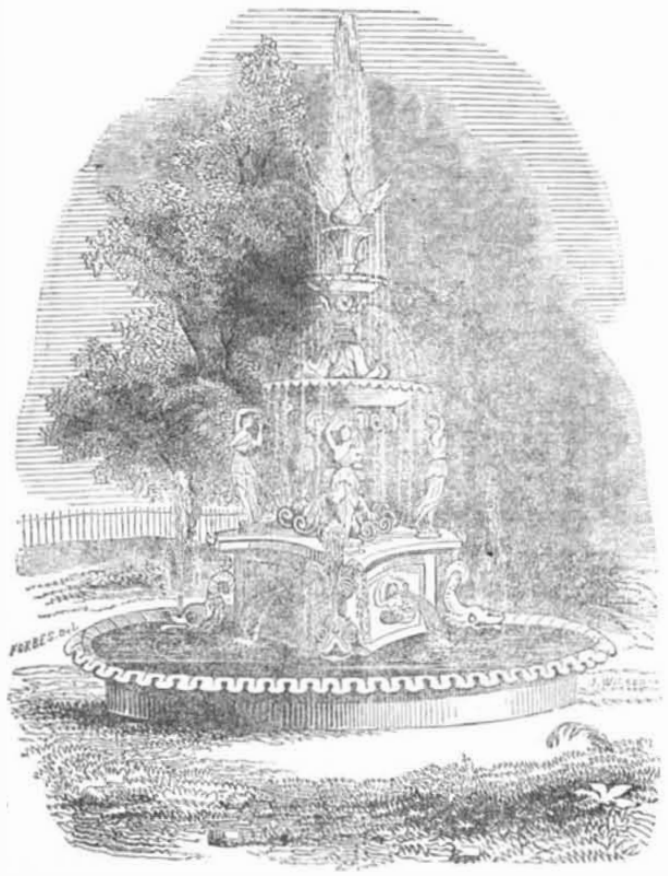
Chromium.

This is a metal of great rarity. The cheapest way to extract it, is from the chromate of iron. It is from this ore that the beautiful pigment, chromate of potash, is formed by the action of the nitrate of potash at a red heat. To this pigment we wish more particularly to direct present attention.

It is not long since it was first discovered by Vauquelin, and at first was reckoned of no more use than as a beautiful crystal, but when it was discovered that in combination with lead it readily imparted its color, it soon rose into some notice. A French chemist in Britain, made his fortune by purchasing a great quantity of the chromate of iron, for almost nothing, from an American captain who had brought it over for ballast. Its qualities were then known to but few.

It is used as a beautiful paint, by the combination of three parts acetate of lead to one of bichromate of potash, and the acid expelled by evaporation. It is used as a beautiful yellow dye on cotton, by impregnating the goods with three parts of acetate of lead to one of chrome; nitrate of lead, if used, instead of the acetate, gives a more ruby glow to the color. On calicoes, the lead is first printed on in paste, and then the goods are run through the chrome. If lime be used with the lead, and the chrome cleared up with muriatic acid, a most durable yellow is the result. If lime is used with the lead, and after the goods are run through the chrome, they are passed through hot lime liquor, a beautiful orange is the result, but above a certain degree of heat, the lime acts as a discharge. The bichromate of potash is also used in the dyeing of green on cotton, a very fast color, by simply dyeing an indigo blue, and then a chrome yellow on the top. The sulphate of zinc is often used in this color. Chrome is much used in dyeing catechu brown, especially when wanted on the yellow shade. It is also used in the new fast cotton black, a color which gets no sumach. It is now used extensively in dyeing black on woolen goods, and a richness of color is imparted which far surpasses any of the old methods. Chromic acid is used to give a beautiful rosy tint to some kinds of cutlery in the tempering; as a pigment however, and a dye, it is best known.

FANCY FOUNTAIN.



This engraving represents a large fountain for public grounds—height 13 feet, and the diameter of basin 15 feet. The diameter without the basin is ten feet. The cost of a fountain of this size is about $1000. They can be furnished, if required, 30 feet high and 25 feet diameter, by the manufacturer, Mr. D. L. Farnam, 29 Fulton street. This design will be approved by all admirers of classic yore, and appears well adapted to the grounds of colleges and other literary institutions.

The Wave Principle in Ship Building.

(*Concluded from No.* 26.)

The following is the explanation by the inventor, of the theory of what is known as the wave principle in ship building. He was first induced to direct his attention to this subject when the canal companies in England proposed some years ago to establish swift boats that migh compete with the mail coaches. On being applied to by them, his first attempt was to build one with a spheroidal bow, produced by the revolution of an ellipse; but the result was not as favorable as he wished. The favorite shape of bow among seamen at that time was that called a duck's breast, but the effect was to raise a large wave in front immediately in front of the vessel, which of course considerably retarded its velocity. He then directed his attention to the motion of the water itself. When a vessel passed through the water at a great velocity a high wave was raised at the head, as high in the old steamers as four feet; and this wave on falling back formed a hollow by its pressure immediately behind it, and the water was afterwards sent out with great force on both sides of the bow. All this was a costly and useless expenditure of force. He thought that, in removing the particles of water to allow the vessel to pass, it was necessary to expend the least force on the whole; and, therefore, the first impulse should be given gently. This force should increase to a certain point, and then decrease as gradually leaving the particles to rest quietly at the greatest breadth. In endeavoring to ascertain the least resistance necessary to bring the particles of water out of a state he conceived that there ought to be a similarity between the motion of water and that of a pendulum revolving in a circle according to the curve of the vessel's size; and this led him to adopt the form known as the wave principle. This is different from a bow formed of two straight lines meeting at an acute angle; it being gently hollower than such a bow towards the cutwater, and a little rounder towards the greater breadth. The object to be attained he conceived, to remove the particles of water rapidly, and at the same time not to throw them farther aside than the breadth of the vessel amidships. That this object was effected by the wave principle he ascertained in the following manner: He got his model boat 75 feet long, to be carried along by high-bred horses at a speed of 17 miles an hour, and made the head pass between two oranges floating on the water, and which he intended to represent two particles of the water to be removed. The oranges merely touched the side of the vessel until they got amidships, and there remained; thus showing that no greater force had been applied to them than was necessary to remove them out of the way of the vessel. Another phenomenon observed was, that, instead of the high wave at the bow, which sailors though, was a sign of a ship sailing well, or what they called carrying a bone in her teeth, the elevation and subsequent depression of the water, were entirely got rid of. In their place there was a gentle, long elevation, just under the shoulder of the vessel, where all sailors would like her to be supported. For the closing of the water at the stern he at first thought it would be better to have the same shape for behind; and this had the effect of bringing the oranges together again behind in an horizontal direction; but he found it did not answer at all. It occasioned too high a resistance, and had a multitude of bad qualities. He discovered, in fact that the fuller she was behind, and the flatter she lay on the surface of the water, the quicker she sailed; and that this should be the case he thinks is clear, when it is considered that the water, returning to its level, is governed by an entirely different law from that by which it is first separated. The power which sends the water into the wake has nothing to do with that which displaces it before. It is forced upwards by the greatest pressure from below in vertical lines of the cycloidal family. A run fine below and full above was attained, by many experiments, as the best for good steering and other qualities. This full water-line above should never exceed a cycloid. The vertical lines, in which the water rises in the secondary wave (which really replaces the displaced water) may be cut off, at any convenient height, close to the stern. These two considerations united led him to the adoption of what is known as the wave principle. In the wave formation the greatest breadth of the ship is not at the bows or even amidships, but a great way aft, in the ratio of three to two. In the shear plan the bow of this form has one main cycloid, and the particles ascend and descend without shock.

Solders for Brass and Copper.

Take 16 parts of brass and one of zinc, melt the brass in a crucible, and also heat the zinc. When the brass is melted the zinc is thrown hot into the crucible, which is then covered, and the whole well shaken together. In about 2 minutes, pour the metal into a proper vessel of water. The metal by this process is divided into small grains, after which it is well washed and kept for use. The proportions may vary from those given to two parts of brass and one of zinc.

A *hard solder* for copper is made by the above process, only substituting copper for brass in the proportions of eight parts of copper to one of zinc. This makes quite a fusible solder, which is at the same time malleable; ten parts of copper and one of zinc make a harder but less fusible solder.

The soft solder for brass is made of six parts of brass, and one of zinc, and one of tin. The brass is first melted, the tin is then added, and lastly the zinc, which last metal should be first well heated, then shaken and divided as above directed.

Railroads in the United States.

The last number of the Railroad Journal was accompanied by a supplement appendage containing on a full sheet, a table showing the names, locations, lengths, costs &c. of all the railroads in the United States. This table must have cost immense labor, and is the most valuable statistical sheet that we have seen for years. We shall present some part of its intelligence in future numbers.

An ox weighing 1000 lbs., recently leaped from the third story of a side hill slaughter-house, turning a somerset, and ran three miles before he was captured.

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